

DEPARTMENT OF MECHANICAL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN

COURSE OUTLINE			
Course Title	DYNAMICS LAB		
Course Code	ME LR 15	No. of Credits	02
Department	Mechanical Engineering	Faculty	Prof. S.S.Arulappan
Pre-requisites	Knowledge of Engineering Mechanics, Strength of materials		
Course Coordinator	----		
Teacher E-mail ID	sarul@nitt.edu	Telephone No.	+918220931901
Course Type	Core Course		
COURSE OVERVIEW			
To introduce the students to various dynamic systems, and perform experiments related to the field of dynamics and vibration			
COURSE OBJECTIVES			
1. To equip students with understanding of the fundamental principles and techniques for Identify different types of dynamic systems and classify them by their governing equations. 2. To develop a model of a mechanical system using a free body diagram. 3. To develop equations of motion for translational and rotational mechanical systems.			
COURSE OUTCOMES (CO)			
Course Outcomes		Aligned Programme Outcomes (PO)	
1. Compute the moment of inertia of rigid bodies		Would have developed an ability to apply the knowledge of mathematics, sciences, and engineering fundamentals to the field of dynamics	
2. Demonstrate the working principles of gyroscope		Would have developed an ability to apply the knowledge of mathematics, sciences, and engineering fundamentals to the field	

	of dynamics
3. Experiment with vibrations and balancing	Would have developed an ability to apply the knowledge of mathematics, sciences, and engineering fundamentals to the field of vibration and balancing

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Experiment	Mode of experiment
1	Calculation of centre of gravity at NIT Tiruchirappalli location	Experiment
2	Determination of the centre of percussion and moment of inertia of the given compound pendulum	Experiment
3	Determination of the natural frequency of the system with and without damping	Experiment
4	Static and dynamic balancing of the unbalanced shaft	Experiment
5	gyroscope	Experiment
6	Determination of the stiffness of the shaft in Torsion and Mass moment of inertia of disc assembly	Experiment
7	Acceleration of the geared system	Experiment
	Final exam	

COURSE ASSESSMENT METHODS

S.no	Mode of assessment	Marks Weight age
1	Lab record	30%
2	Final viva exam	30%
3	Final practical exam	40%
	Total	100%

ESSENTIAL READINGS

Reference Books:

1. Hand-outs given for each and every experiments
2. Videos of each experiment
3. Introduction To Mechanics Of Machines Morrison & Crossland

COURSE EXIT SURVEY

A survey will be taken from the students at the end of the semester through a questionnaire on coverage of syllabus, usefulness of course plan, teaching efficiency etc.

COURSE POLICY (including ^{NO} plagiarism, academic honesty, attendance, safety, etc.)
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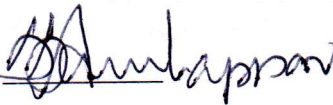
1. Students who have completed all the given experiments and submitted the records will be permitted to attend the final practical exam
2. Calculations and readings for the record and answer to the questions should be submitted in electronic format

ADDITIONAL COURSE INFORMATION

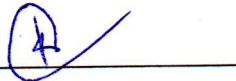
The faculty is available for consultation at the times given by the faculty member. Queries to the course teacher may also be emailed to the email-id sarul@nitt.edu

FOR SENATE'S CONSIDERATION

Course Faculty



CC-Chairperson



HOD



Date: _____